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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,915	07/29/2003	Craig A. Hamilton	9151-27	8120

20792 7590 03/08/2007
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EXAMINER

LARYEA, LAWRENCE N

ART-UNIT	PAPER NUMBER
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3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/628,915

Applicant(s)

HAMILTON ET AL.

Examiner

Lawrence N. Laryea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/04/05 05/27/05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application
- ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ryals et al (Patent 5431161)** in view **Solomon (Pub 2003/0018251)** and further in view of **Breeuwer et al (Pub 2004/0057607)**.

3. Re Claims 1,13-15, 16, and 18-21: **Ryals et al** disclose a system of displaying cardiac information of a patient (**See Col. 5, line 66-68**) comprising: obtaining a plurality of tomographic cine loops of the heart of the patient at a plurality of heart rates (**See Col. 29, line 23-51**) the plurality of cine loops including cine loops including frames of wall motion images and at least one cine loop including frames of perfusion images of at least one cardiac location (**See Figures 8,13 and Col. 50, line 3-8**) and simultaneously displaying both wall motion cine loops and the at least one perfusion cine loop (**See Col. 5, line 6-25,35-39 and Col. 53, line 47-61**).

4. Further Re Claims 18-21: **Ryals et al** disclose a system of displaying cardiac information of a patient wherein a user interface for tomographic imaging evaluation, comprising: at least one region configured to display a plurality of cine loops of MRI images of cardiac wall motion; and at least one region configured to display at least one

tomographic image of cardiac perfusion (**See Figures 3,5-8,10-13,14, Col. 5, line 62-65, Col. 12, line 3-14, Col. 21, line 60-68, Col. 22, line 1-10**).

5. Further Re Claim 14: **Ryals et al** disclose a system of displaying cardiac information of a patient wherein a computer program product for displaying cardiac information of a patient, comprising: a computer readable medium having computer readable program code embodied therein, the computer readable program code comprising: computer readable program code configured to obtain a plurality of MRI cine loops of the heart of the patient at a plurality of heart rates, the plurality of cine loops including cine loops including frames of wall motion images and at least one cine loop including frames of perfusion images of at least one cardiac location; and computer readable program code configured to simultaneously display both wall motion cine loops and the at least one perfusion cine loop (**See Col. 5, line 49-65 and Col. 18, line 16-26**).

6. Re Claim 3: **Ryals et al** disclose a system of displaying cardiac information of a patient wherein obtaining a plurality of tomographic cine loops comprises acquiring a plurality of tomographic cine loops while a stress test is administered to the patient (**See Col. 9, line 9-44 and Col. 48, line 48-67**).

7. Re Claim 4: **Ryals et al** disclose a system of displaying cardiac information of a patient comprising evaluating the displayed tomographic cine loops to determine a presence or absence of coronary artery disease based on the displayed cine loops (**See Col. 5, line 39-48**).

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8. Re Claims 2,7-11 and 12: **Ryals et al** disclose a system of displaying cardiac information of a patient wherein a computer operative functions are used to add, repeat, remove frames from at least one of the displayed wall motion cine loops or the perfusion cine loop and adjust the duration of display of frames of a least one of the plurality of tomographic cine loops such that each of the tomographic cine loops has a common total duration (**See Col. 52, line 36-49, Col. 8, line 56-68, Col. 31, line 21-68, Col. 32, line 1-56, Col. 33, line 24-68, Col. 34, line 1-46**).

9. **Ryals et al** disclose all the features of the claimed invention above except wherein the system performs myocardial delayed enhancement perfusion imaging and also wherein the screen displays differing locations associated with the heart of the patient for a differing or single dosage of a stress inducing agent.

10. Re Claims 5 and 6: **Breeuwer et al** disclose a perfusion system wherein a late-enhancement analysis unit (**103**) the system performs myocardial delayed enhancement perfusion imaging and also the screen displays differing locations associated with the heart of the patient for a differing or single dosage of a stress inducing agent (**See Paragraphs [0002], [0010], [0003] and Fig.1**).

It would have been obvious to one having ordinary skill in the art at the time invention was made to modify the system of displaying cardiac information of a patient similar to that of **Ryals et al** wherein a late- enhancement analysis unit (**103**) performs myocardial delayed enhancement perfusion imaging and also the screen displays differing locations associated with the heart of the patient for a differing or single dosage of a stress inducing agent similar to that of **Breeuwer et al** in order to simultaneous

analysis both first pass and late enhancement images(See Paragraphs [0006]) as taught by **Breeuwer et al.**

11. **Ryals et al** and **Breeuwer et al** failed to expressly disclose using MRI system for displaying cardiac information of a patient.

12. **Solomon** discloses a system of displaying cardiac information of a patient comprising: obtaining a plurality of MRI cine loops of the heart of the patient at a plurality of heart rates the plurality of cine loops including cine loops including frames of wall motion images (**See Paragraph [0013], line 1-4 and Paragraph [0032]**).

It would have been obvious to one having ordinary skill in the art at the time invention was made to modify the system of displaying cardiac information of a patient of **Ryals et** similar to that **Breeuwer et al** wherein a late- enhancement analysis unit performs myocardial delayed enhancement perfusion imaging and also the screen displays differing locations associated with the heart of the patient for a differing or single dosage of a stress inducing agent in order to simultaneous analysis of both first pass and late enhancement images as taught by **Breeuwer et al** and a MRI system to produce a plurality of MRI cine loops of the heart similar to that of **Solomon** in order to not expose the patient to ionizing radiations.

13. Applicant has not disclosed that using "MRI cine loops" provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the imaging system(SPECT) of **Ryals et al** as modified with **Breeuwer et al**, and applicant's invention, to perform equally well with any

type of tomographic techniques such as CT and PET, would perform or yield the same function of imaging cine loops of an organ.

Therefore, it would have been prima facie obvious to modify **Breeuwer et al** to obtain the same method as specified in the claims because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of **Ryals et al** as modified by **Breeuwer et al**.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bishop et al (Patent 6597940) disclose that imaging techniques such as ultrasound, MRI, x-ray, CT, planar nuclear medicine or SPECT can be employed to image moving organs in human body.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence N. Laryea whose telephone number is 571-272-9060. The examiner can normally be reached on 9:30 a.m.-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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